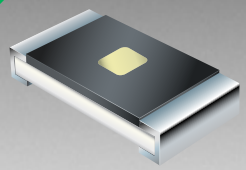


*RoHS COMPLIANT



BOURNS®

Features

- RoHS compliant*
- Small package dimensions
- Power rating at 70 °C = 1/16 W
- Three layer termination process with nickel barrier helps prevent leaching and provides excellent solderability

- Suitable for most types of soldering processes
- Standard packaging on paper tape and reel
- Sulfur-resistant design

CR0402-AS Series - Sulfur-Resistant Thick Film Chip Resistors

General Characteristics

| Characteristic | CR0402-AS |
|--|-------------------------------------|
| Power Rating @ 70 °C per Resistor | 0.063 W |
| Resistor Tolerance | ±1 %, ±5 % |
| Resistance Range - 1 % Tolerance (E24 + E96) | 10 ohms to 1 megohm |
| Resistance Range - 5 % Tolerance (E24), Zero-ohm Jumper | 1 ohm to 10 megohms, 0 ohms |
| Temperature Coefficient of Resistance (TCR) 1 % Tolerance 5 % Tolerance Zero-ohm Jumper | ±100 ppm/°C ±200 ppm/°C** N/A |
| Maximum Overload Voltage | 50 V |
| Maximum Working Voltage | 100 V |
| Operating Temperature Range | -55 to +155 °C |
| Storage Conditions | +5 ~ +40 °C, 25~75 % RH, 1 year |
| Derating Temperature | +70 °C |
| Packaging (Paper Tape) | 10,000 pcs. per reel |
| Zero-ohm Jumper: Current Rating Maximum Resistance | 1 A per element 50 milliohms |

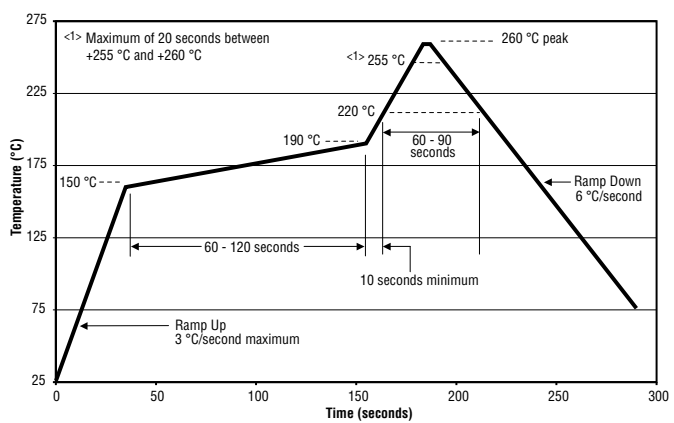
**TCR for 1 ohm to 9.1 ohm resistance range, 5 % tolerance is ±300 ppm/°C.

Environmental Characteristics

| Specification | Test Method (JIS C 5201-1) | Characteristics |
|---------------------|---|------------------|
| Short Time Overload | Rated voltage x 2.5, 5 seconds | ±(2 % +0.1 ohm) |
| Soldering Heat | +260 °C ±5 °C, 10 ±1 seconds | ±(1 % +0.05 ohm) |
| Temperature Cycling | -55 °C (30 minutes) - normal (2~3 minutes) +125 °C (30 minutes) - normal (2~3 minutes), 5 cycles | ±(1 % +0.05 ohm) |
| Moisture Load Life | +40 °C, 90~95 % RH, 1000 hours, 1.5 hours ON, 0.5 hours OFF | ±(3 % +0.1 ohm) |
| Load Life | +70 °C, 1000 hours, 1.5 hours ON, 0.5 hours OFF | ±(3 % +0.1 ohm) |
| Sulfur Test | 3 ppm H ₂ S, +50 °C, 90~95 % RH, 100 hours | ±(5 % +0.1 ohm) |

NOTE: Zero-ohm jumper ≤100 milliohms.

Soldering Profile



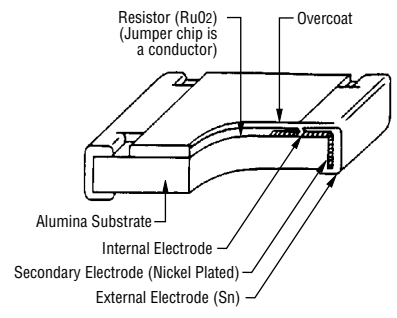
How To Order

CR 0402 - F X - 1002 G AS

- Chip Resistor
- Size: 0402
- Tolerance: F = 1 %, J = 5 %
- TCR (ppm/°C): X = ±100, W = ±200, / = N/A (for Jumper)
- Resistance Code: For 1 % Tolerance:
 - <100 ohms: "R" designates decimal point (example: 24R3 = 24.3 ohms)
 - ≥100 ohms: First three digits are significant, fourth digit represents number of zeros to follow (example: 8252 = 82.5K ohms)
- For 5 % Tolerance:
 - <10 ohms: "R" designates decimal point (example: 4R7 = 4.7 ohms)
 - ≥10 ohms: First two digits are significant, third digit represents number of zeros to follow (example: 474 = 470K ohms; 000 = Zero-ohm jumper)
- Packaging: G = Paper Tape (10,000 pcs. on 7-inch plastic reel)
- Special Characteristics: AS = Sulfur-resistant, Tin-plated terminations (RoHS compliant)

For Standard Values Used in Capacitors, Inductors, and Resistors, [click here](#).

Construction



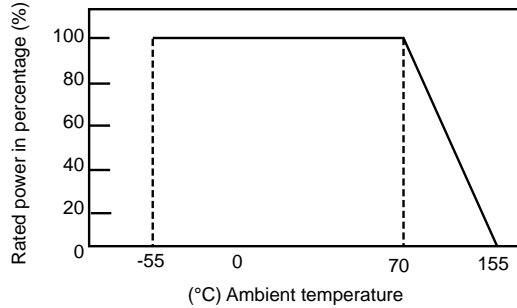
WARNING
Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf

CR0402-AS Series - Sulfur-Resistant Thick Film Chip Resistors



Derating Curve



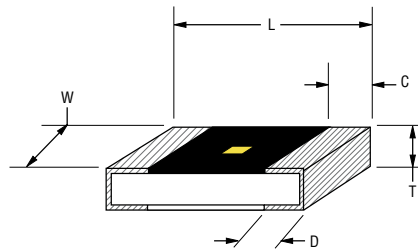
Typical Part Marking

(See Product Dimensions)

- 1 % & 5 % Tolerance Yellow dot
- Zero-ohm Jumper 000

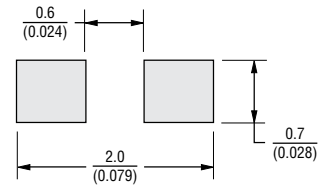
Product Dimensions

| Dim. | CR0402-AS |
|------|---|
| L | $\frac{1.00 \pm 0.05}{(0.039 \pm 0.002)}$ |
| W | $\frac{0.50 \pm 0.05}{(0.020 \pm 0.002)}$ |
| C | $\frac{0.20 \pm 0.10}{(0.008 \pm 0.004)}$ |
| D | $\frac{0.25 \pm 0.10}{(0.010 \pm 0.004)}$ |
| T | $\frac{0.35 \pm 0.05}{(0.014 \pm 0.002)}$ |

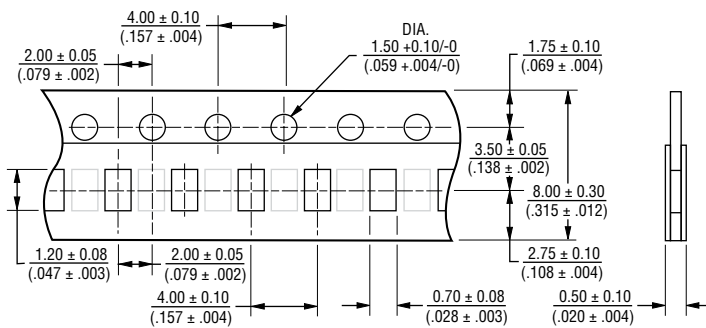


DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Recommended Land Pattern



Packaging Specifications



Reel Diameter: $\frac{180}{(7.087)}$

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$



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09/19

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Users should verify actual device performance in their specific applications.

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